REMARKS

Claim 51 has been amended to correct bold & underline typeface that appeared in the claim due to some artifact in Applicants' word processing program.

Claims 21 and 33 have been amended to correct an obvious spelling error.

Claims 12, 24, 36, and 40 have been amended to correct obvious typos in the dependency relationship, which led to a formality issue related to antecedent basis.

The claims are not narrowed, the amendments were all purely formal in nature, and the changes are not in response to any rejection.

Rejection under 35 USC section 112 paragraph 2: meaning of "reversible" and "so reversible"

These rejections are respectfully traversed.

The word "reversible" is a well-known English word. According to <u>The American Heritage Dictionary of the English Language</u> (Houghton Mifflin 1981) p. 1112 the word means "capable of being reversed." Since the invention relates to depositing data into a data source, it is clear that what is to be reversed is the direction of movement of data when using the annotated schema, i.e. retrieving data from the source. Thus the schema is reversible if it can be used both for deposit and retrieval. Moreover, in case one of ordinary skill in the art should have any doubt as to what this word means in the context of the invention, the word is completely explained in the specification. The need for reversibility is first raised in the specification at page 17 of the specification. First retrieval is to be effected in accordance with the prior application. Then the "reverse operation" at line 26 is to be done using "the annotated DTD," in other words the same

DTD as was use for retrieval. More information about reversibility appears at page 22. New claim 75 is added to emphasize the annotated schema being used for both retrieval and deposit.

Reversible is not a relative term. An example of a relative term is the word "large," where one has to ask "large in comparison to what?" Reversible is a functional recitation that relates to an entire operation. There is no scale of reversal where one thing is more reversed than another. Something is either reversed or it is not.

With respect to the term "so reversible," Applicants suppose that the Examiner is objecting to the word "so" which has several meanings. Applicants respectfully submit that in context in the claims it is clear that the word "so" means "thus" or "in that way," not as an emphatic like "so big." Accordingly, Applicants respectfully submit that with this meaning and in context the term is not relative. However, in an effort to advance prosecution, the word "so" has been deleted from the phrase "so reversible." Applicants respectfully submit that this does not narrow the claims.

Rejections under 35 USC section 101

This rejection is respectfully traversed.

The Examiner states that the material recited in claims 25-41 and 64-74 is non-functional, descriptive material. Applicants respectfully disagree.

The recited limitations are functional, not descriptive.

> 'In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component.... "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.' MPEP 2106 I. B. 1.

Descriptive material is material which "cannot exhibit any functional interrelationship with the way in which computing processes are performed" MPEP 2106 IV. B. 1. (b)

Independent claim 25 recites that the code is for performing listed operations, i.e. retrieving data and creating an electronic communication. Similarly, independent claim 64 recites code for receiving, processing, and depositing. Those recited operations are functional, and relate to the way in which computing processes are performed. These recitations are not descriptive.

Independent claim 37 recites a universal schema adapted to create document types; and annotations adapted to guide retrieval of data in accordance with the schema. These are also functional recitations, relating to the way computing processes are performed, and not merely descriptive.

None of these recitations bear any resemblance to purely descriptive material such as music, literary works, or compilations or arrangements of data. Withdrawal of these rejections is accordingly respectfully requested.

Art rejections

The art rejections are respectfully traversed.

The specification contains the following definitional section at the bottom of page 6:

> Herein, the following definitions will be used. A data source or document "schema" describes the structures and types for data or documents. An "annotation" furnishes the schema with mapping functions that connect data from heterogeneous data sources and target data segments.

Applicants respectfully submit that in making the art rejections the Examiner ignores these definitions and reads the claim limitations on teachings that have no pertinence to the

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terminology as defined in the specification. Applicants respectfully submit that this is improper. Applicants are allowed to be their own lexicographers. This problem extends to all of the rejections.

Applicants will now discuss problems with individual rejections.

Claims 1, 13, 25, 49

Claim 1 recites first and second annotated schemas.

The Examiner purports to find the first annotated schema in the Xedi.org reference, on page 12, fig. 8, and pages 11-14. Applicants have read these sections of the reference carefully and find no teaching or suggestion there of any <u>annotated</u> schema. They talk about a dictionary for translating documents.

The Examiner does not even purport to find the second annotated schema in the reference.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case of obviousness against claim 1.

Claim 13 contains limitations analogous to those of claim 1 with respect to the arguments noted above.

With respect to claim 13, the Examiner further alleges that Fig. 8 of the reference shows a schema being transmitted over the Internet. Applicants respectfully disagree. Fig. 8 is not accompanied by any description that refers specifically to it. Fig. 8 shows only some pieces of equipment connected to a cloud representing the Internet. Fig. 8 fails to teach or suggest any specific thing being transmitted over the Internet at all.

Claims 25 and 49 include recitations analogous to those discussed above with respect to claim 1.

Claims 3, 15, and 27

Claim 3 recites that the first format includes at least one value pair. The format is originally recited in claim 1 as being a format for <u>data</u> from a <u>data source</u>. With respect to the preferred embodiment, value pairs are illustrated in Applicants' Fig. 8B. Inspection of this figure will reveal that a "value pair" is a **format for data.** The figure shows a list of <u>data</u> in this value pair format. Thus each line of the figure includes data formatted into a pair of values. For instance, the first line reads '(ST@143, "850")'. This is a pair of pieces of data, in other words a pair of values.

Against the recitation of a value pair, the Examiner cites Kotok, page 5, par. 4. The portion Kotok referenced by the Examiner does not appear to relate to the concept of a data format being value pairs. The text says "sets of elements and their attributes." These are not data in a format that includes pair(s) of value(s), but a grammatical description in a document type definition.

Applicants respectfully submit that the Examiner has accordingly failed to make a *prima facie* case against claim 3.

Claims 15 and 27 include limitations analogous to those discussed above with respect to claim 3.

<u>Claims 4, 8, 16, 20, 28, and 32</u>

Claim 4 recites the same type of software engine being applied first to the at least one type of data source and then to the first electronic format. The Examiner purports to find this in Xedi's Fig. 8. Applicants respectfully submit that the Examiner misconstrues the reference. This figure shows only some servers and other equipment hooked to the Internet. No software is shown at all.

Claims 8, 16, 20, 28, and 32 are analogous with respect to this point.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against these claims.

<u>Claim 6, 18, and 30</u>

The apparent flaw in the Examiner's reasoning is particularly clear with respect to the rejection of claim 6 where the Examiner alleges that annotated DTD's are shown in the reference at the bottom of page 11. Applicants respectfully submit that the Examiner misconstrues the reference. This paragraph of the reference speaks only of an EDI-XML translator. A translator is not a DTD. A DTD is a particular type of software structure, known in the XML art, for generating XML documents. DTD's are defined in the international standards for XML. Applicants respectfully submit that the Examiner is not free to redefine this term any way he chooses, and, especially, that an arbitrary translation program fails to teach or suggest an annotated DTD.

Claims 18 and 30 are analogous to claim 6 with respect to the discussion in the previous paragraph.

Claims 7, 19, and 31

Claim 7 recites, *inter alia,* that the second annotated schema comprises annotations for retrieving specifications.

With respect to claim 7, the Examiner cites language on page 10 of the reference regarding using a single DTD for multiple documents. However, Applicants find no teaching or suggestion on this page that this DTD is annotated as recited in claim 7. Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claim 7.

Claims 19 and 31 include recitations analogous to those discussed above with respect to claim 7.

Claims 9, 21, and 33

Claim 9 recites that the at least one type of data source comprises heterogeneous data bases.

Against this recitation the Examiner cites the first paragraph of page 3 of Kotok. This paragraph relates to the X12 standard. Applicants do not find that the paragraph relates to heterogeneous data bases at all, but only to a single standard. Applicants accordingly respectfully submit that the Examiner has failed to make a prima facie case against claim 9.

Claims 21 and 33 contain limitations analogous to those discussed above with respect to claim 9.

Claims 10, 22, and 34

Claims 10, 22, and 34 recite using a GUI tool to create internal representations relating the second format to the at least one type of data source.

Against this recitation the Examiner cites Rein, p. 3, par. 2. Applicants respectfully submit that the Examiner has become confused by the presence of similar terminology in a totally different field. This paragraph discusses a GUI interface, but the interface is manipulating API's, content and presentation elements. One of ordinary skill in the art would not combine Rein with the other reference, except in light of impermissible hindsight in view of Applicants disclosure. Applicants respectfully submit that this reference can only be located by doing a keyword search on Applicant's claim language, which is using Applicants' claims as a roadmap[1].

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claims 10, 22, and 34

Claims 11, 23, and 35

These claims recite that the GUI tool can systematically organize a template from combining and merging multiple tables.

Against this recitation, the Examiner cites page 3, paragraph 2 of Rein. Applicants have examined this section of the reference and find that the only discussion of templates indicates that templates are used to generate site maps. Applicants find no teaching or suggestion that the GUI can organize templates at all, much less from combining and merging multiple tables.

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[1] The CAFC has said

The "as a whole" instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features   way to achieve a new result - often the very definition of invention. Ruiz v. A. B. Chance Co., http://www.ll.georgetown.edu/federal/judicial/fed/opinions/03opinions/03-1333.html at p. 7, 357 F. 3d 1270, 2004 US App. Lexis 1325, 69 U.S.P.Q. 2d (BNA) 1686 (Fed. Cir 2004)

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claims 11, 23, and 35

Claims 12, 24, and 36

These claims recite, *inter alia,* that the GUI tool can accept single annotations. Against this recitation, the Examiner cites Kotok and page 3, par. 1; but then the Examiner admits that what is shown in Kotok is appending information to data. Applicants find no teaching or suggestion here of any "annotations" as Applicants have defined that term in their specification.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claims 12, 24, and 36.

Independent claim 37

Claim 37 recites annotations adapted to guide retrieval of data from at least one type of data source to specify a particular output document in accordance with a universal schema. The universal schema is adapted to create all possible document types suitable for use with a single electronic document specification language.

In rejecting this claim, the Examiner reads the EDI messages as annotations to a schema. Applicants respectfully submit that the Examiner misconstrues the reference. The EDI messages are not annotations that are adapted to <u>guide retrieval</u> in accordance with a <u>universal schema,</u> unlike Applicants recited invention. As far as Applicants can tell, the EDI messages are what is to be translated or converted.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claim 37.

Claim 40

Claim 40 depends from 37 and 39 recites a universal DTD with recursive annotations. It thus relates to the field of a universal DTD.

The Examiner cites Sheth relating to the recursive annotations recitation of claim 40. Applicants respectfully submit that the Examiner misconstrues Sheth. Sheth relates to recursive DTD structures, not annotations. Such recursive DTD structures are a normal part of DTD grammar. They have nothing to do with the field of the invention. A DTD could be recursive in accordance with Sheth and also have recursive annotations in accordance with the invention.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claim 40.

Claims 42, 53, and 64

Claim 42 recites, *inter alia*, an annotated schema. Against this recitation the Examiner cites pages 12-13 of Xedi reference. Applicants have read this section and see it as setting forth problems relating to XML and EDI and also as listing organizations that are dealing with these problems. Applicants see absolutely nothing here that would teach or suggest an annotated schema, as defined by Applicants, or indeed much of any solution to anything.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against claim 42.

Claims 53 and 64 include recitations analogous to those discussed above with respect to claim 42.

<u>Claims 45-47, 56-58, and 67-69</u>

These claims are rejected over a combination that includes Abjanic. Abjanic is from a totally different field. It relates to sending messages between servers and processing nodes. Applicants see no relationship between this reference and annotated schema as defined and claimed by Applicants. Claims 42, 53, and 64, from which these claims depend, also define the field as deposit of data into a data source. Applicants see no relationship between the messages described in the sections of Abjanic cited by the Examiner and deposit of data into a data source. The Examiner seems to think there is some relationship, but Applicants find no basis for this. Clarification is respectfully requested.

Claims 46, 57, and 68 recite that if an annotated schema is not reversible, a revised annotated schema is created that is reversible. The Examiner purports to find this in paragraphs 85-86 of Abjanic. These paragraphs read as follows:

> [0085] Referring to FIG. 9, at block 910, the transformer 715 determines if the message requires a data transformation or not. If a transformation is required, the transforming switch 710 must determine which transform to perform on the data or message. If no transform is required, for example, if the message is already in a format that may be processed by the destination application or node, then the message is simply passed on to the message director 145 and switch 165, where the message is switched to one of a plurality of servers (or output ports) based on the business transaction information, an address, or other information, block 925.

> [0086] If a transformation is required, a transformation template is retrieved, block 915. The transformation template provides instructions or code indicating how the transform should be performed. The transformation template is preferably retrieved from local storage, such as local memory or cache or local disk, if available locally, or from a remote location, for example, from another server via a network, if not locally available. The transformed message is then switched or output to a server or processing node.

Applicants are mystified. What in this text does the Examiner think constitutes an annotated schema? What in this text does the Examiner think constitutes creating a revised annotated schema? Where is anything checked for reversibility? Applicants see absolutely nothing of the sort. A mere transformation does not necessarily imply any annotated schema. Moreover, retrieving a transformation template when required does not teach or suggest creating a revised annotated schema. Reconsideration is respectfully requested.

With respect to claim 47 (58 and 69 being analogous), the Examiner points to paragraph 98 of Abjanic for a revised annotated schema. This paragraph reads as follows:

> [0098] According to an example embodiment, a first pattern in a received message can be used to identify a transform to be performed on the message, while a second pattern in the message can be used to switch the message to a specific server (content based switching). For example, if a received XML message includes a tag that says "<AXML>," then this may indicate that the data is provided in AXML format. Let also assume that Bookstore.com can process messages or transactions provided only in BXML format. Thus, if the "To" tag in the document says "To: Bookstore.com" (or if the destination address corresponds to Bookstore.com), then the transformer 715 will transform the message from AXML to BXML using an appropriate transformation template, such as an "AXML to BXML" transformation template. The reverse transformation would be used to transform any reply messages from Bookstore.com.

One apparent error in the Examiner's reasoning here is to think that a schema, as defined by Applicants, could be an XML document. A schema as defined by Applicants defines document structure. The document itself is not the schema. Thus a revised XML document is not a revised schema.

Moreover, the reference talks about transforming a message using a template. It is not clear that the template itself is reversible or annotated. The reference talks about a reverse transformation here, but does not teach or suggest that this reverse transformation has anything to do with a reversible annotated schema.

Applicants accordingly respectfully submit that the Examiner has not made a *prima facie* case against these claims.

Claims 50, 61, and 72

In addition to recitations relating to annotated schema -- the arguments against which are defective as discussed above with respect to similar limitations -- these claims recite multiple relational databases.

Against this recitation, the Examiner again cites p. 3, par. 1 of Kotok. This paragraph apparently discusses only a single standard known as X12. Applicants find no teaching or suggestion of multiple relational databases. Applicants are at a total loss to understand why the Examiner even cites this paragraph.

Applicants accordingly respectfully submit that the Examiner has failed to make a *prima facie* case against these claims.

Claims 48, 59, & 70

Against these claims, the Examiner cites "Malerba." This reference appears to be a private e-mail. It is not clear that it constitutes a publication, given the transitory nature of Internet documents.

Moreover, while it mentions "Joins" it is not clear how it relates to the invention.

A further shortcoming of this reference is that it appears to relate to

- recognizing some problems whose nature is not entirely clear, given that it refers to some earlier communication on the topic of "XML Query proposal;" and

- offering to implement an XMLQuery object.

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It is not at all clear what problem is being solved or what solution is being offered.

Moreover, while this group of claims relates to "deposit," the reference appears to relate to queries, which are a type of retrieval.

Applicants respectfully submit that this reference could only have been located by an Internet search on the terms "join" and "XML," which is impermissible hindsight; and that the reference bears no relationship to the invention.

Claims 51, 62, and 73; and 52, 63, and 74

These rejections also cite Malerba, which is again objected to for the same reasons given before.

The arguments over the other references apply here *mutatis mutandi.*

The Examiner's other rejections and/or points of argument not addressed herein would appear to be moot in view of the foregoing. Nevertheless, Applicants reserve the right to respond to those rejections and arguments at a later date. No arguments are waived and none of the Examiner's statements are conceded.

Please charge any fees other than the issue fee to deposit account 50-0510. Please credit any overpayments to the same account.

Respectfully submitted by,

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